



# ENEL experience with the PI System



Presented by **Javier Castañé Ortiz**  
**Enel Energy Europe**



# **ENEL experience with the PI System**

## **2013 PI Users Conference**

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- **PI System Advantages for Enel**
- **Enterprise Agreement experience**

# Enel group

## Who we are



Enel is a multinational group based in Italy, a leading integrated player in the power and gas markets of Europe and Latin America, operating in 40 countries across 4 continents overseeing power generation from 98 GW of net installed capacity and distributing electricity and gas through a network spanning around 1.9 million km to serve 61 million customers

# PI System in Enel History

**2003**



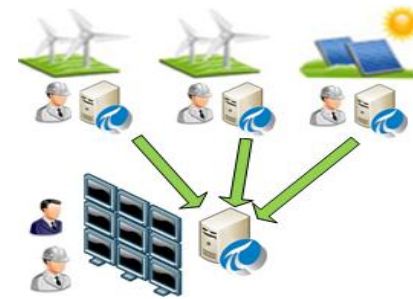
First PI Servers in conventional power plants and central PI Server in Generation Headquarters

**2004-2008**



Deployment of PI Servers in most of conventional power Plants and Applications development

**2008**



Design and initial rollout in Enel Green Power to cover both local country scope and central business overall demand

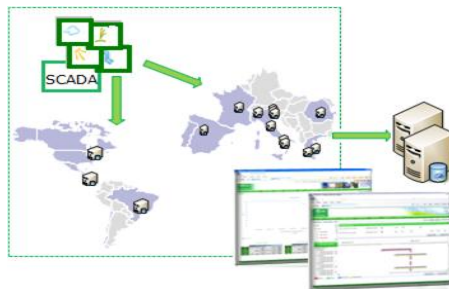
# PI System Usage History

**2009**



Initial deployment  
of PI System in  
Distribution

**2009 - 2011**



Development of managerial  
applications for Plant  
Management and Performance  
Monitoring O&M in EGP



Integration of  
PI System with  
Endesa's Distribution  
System SDE

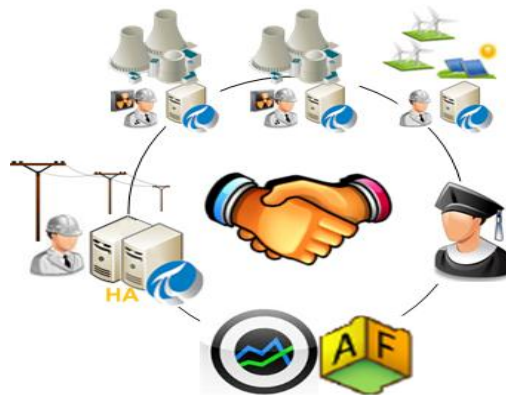
# PI System Usage History

**2011**



Enel and OSIsoft sign an  
Enterprise Agreement from 2011  
to 2016

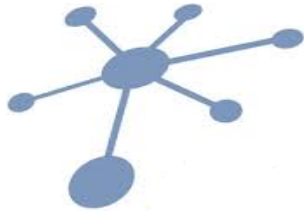
**2012-2016**



Deployment of Enterprise  
Agreement

# PI System Usage

## Future



Smartgrids



Condition  
Based  
Maintenance



Telemetry



Predictive  
Diagnostic



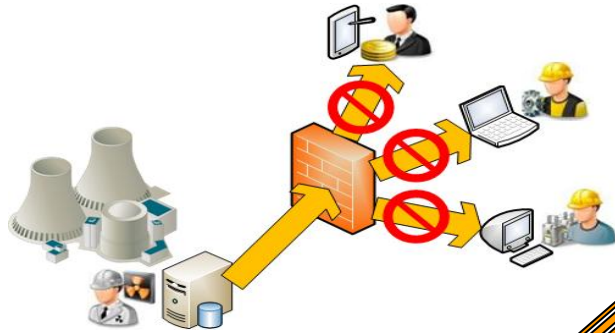
# PI System Advantages

Advantages and benefits that Enel gets from PI System



# PI System Advantages

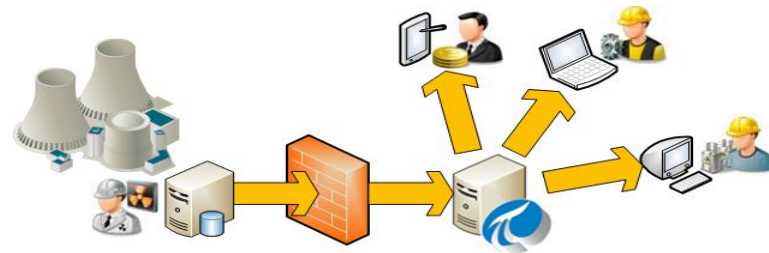
## Availability of operational data



Access to Control systems restricted to plant engineers and Operators.

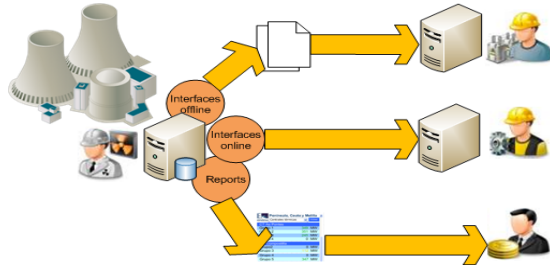


PI System data available to the whole organization



# PI System Advantages

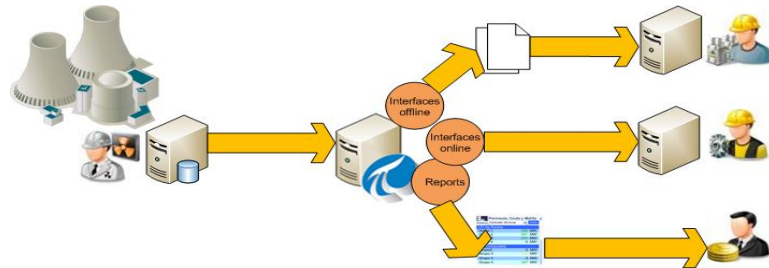
## Control systems focused on plant and grid operation



Control systems overloaded with interfaces with other systems, like Maintenance and Planning or reporting to Financial.

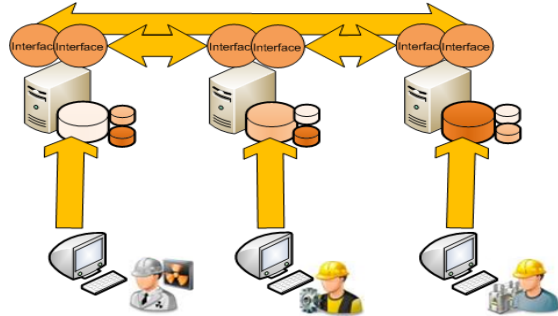


Control systems free of any task not related to real-time plant and grid operation

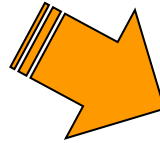


# PI System Advantages

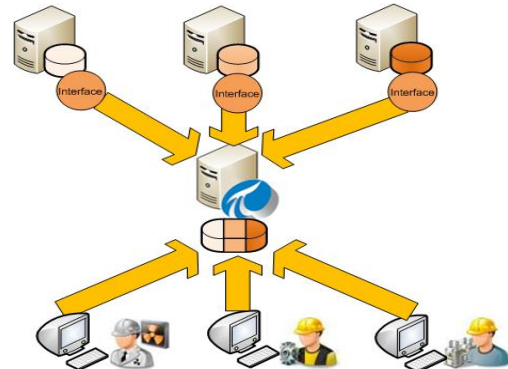
## Information sharing between systems



No data sharing between systems or data interchange through different system to system interfaces and local copies

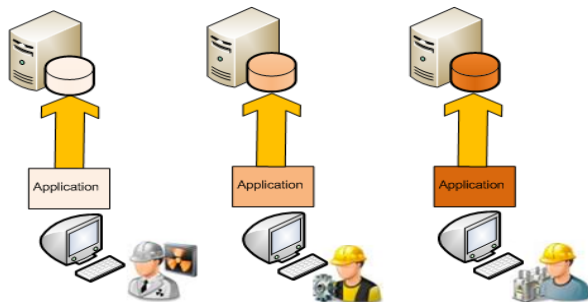


Information sharing between systems without specific system to system interfaces

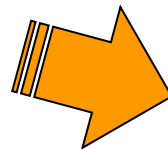


# PI System Advantages

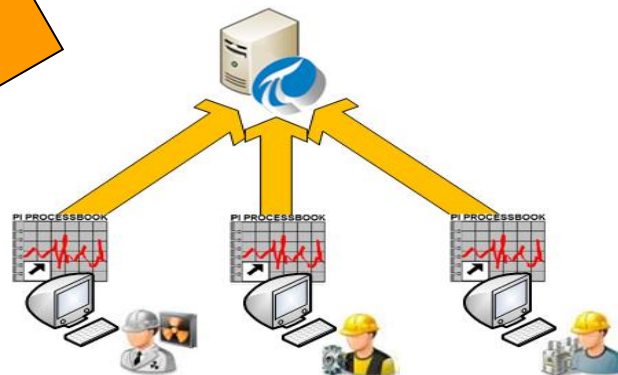
Simplify and standardize access to data



Different applications and data structure

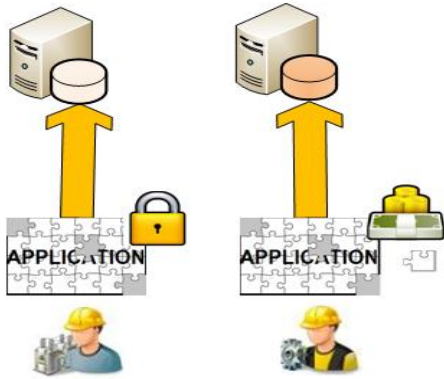


Simple and standard access through PI System client tools

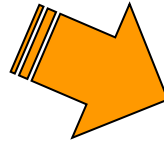


# PI System Advantages

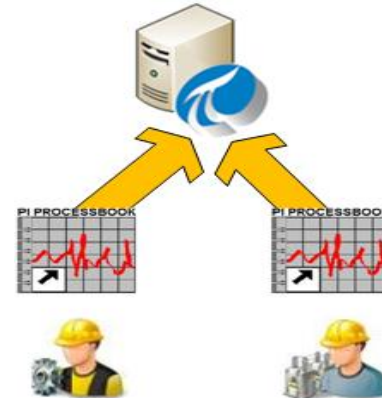
## Ease application building



Original tools for monitoring data in the source systems doesn't fit the user's needs and changing them could be from very expensive to impossible.

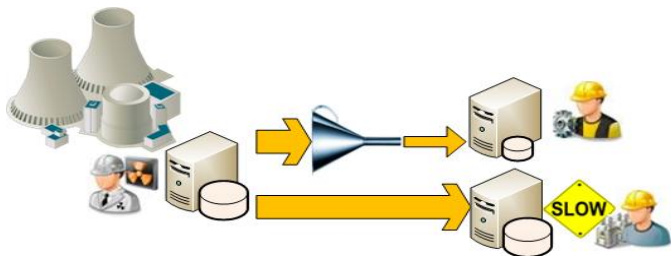


PI Client tools allow easy application building even by final users



# PI System Advantages

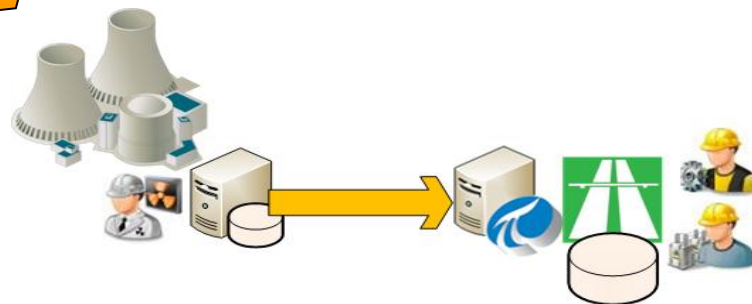
Best performance and detail



Compressed data and/or slow access

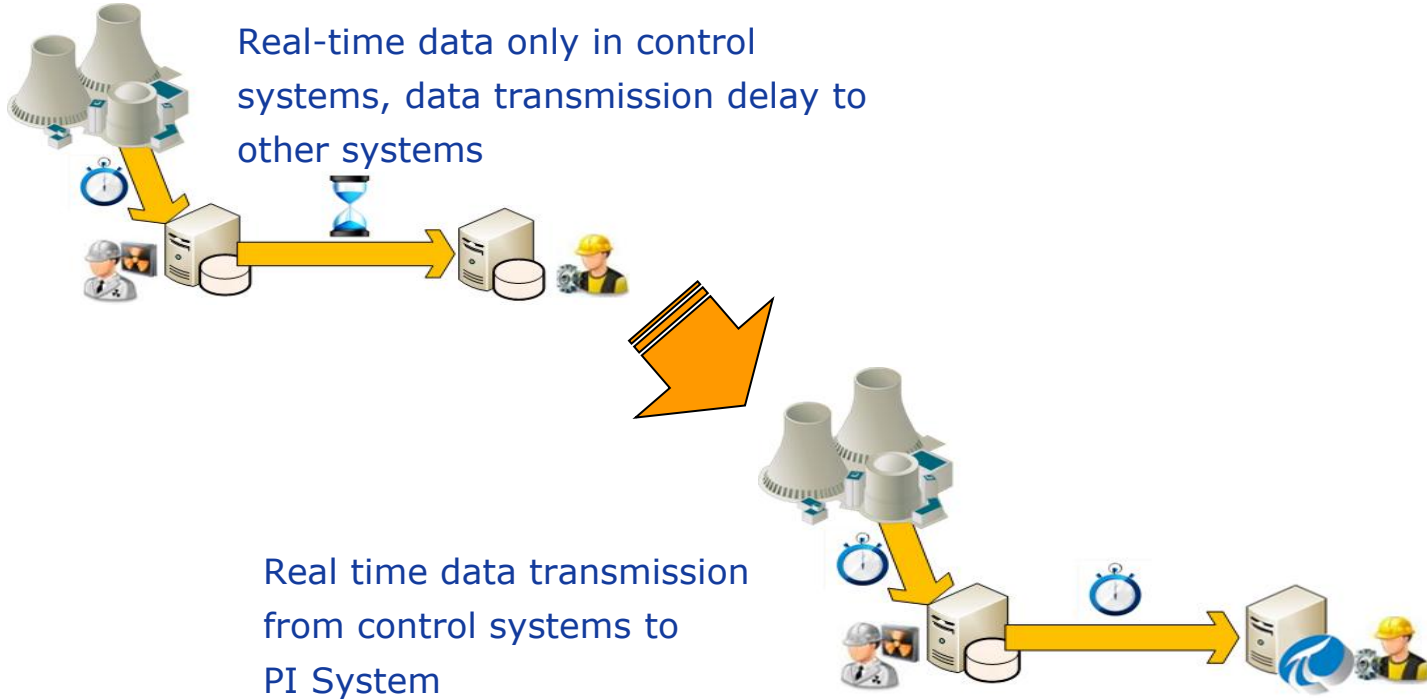


Fast access to detailed data



# PI System Advantages

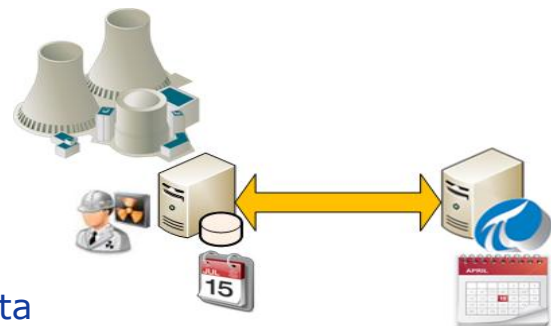
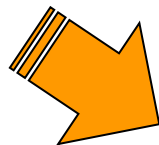
## Real-time applications out of control systems





# PI System Advantages

## Real-time applications out of control systems



# Enterprise Agreement

## Experience of use



# Enterprise Agreement

## Improving use of the PI System



Audit on architecture, configuration and performance in all sites done by OSIsoft's experts



Upgrade to the last available an feasible version of all PI System components in all sites done by OSIsoft's technicians.



Upgrade from standalone PI Servers to High Availability PI Server Collectives in key sites done by OSIsoft technicians.

# Enterprise Agreement

## Expanding use of the PI System



Extending the use of the PI System to more plants by installing at new sites.



Extending the use of the PI System to more assets through increasing number of tags.



Introduced new PI System products like PI Coresight

# Enterprise Agreement

## Learning PI



Instructor-led courses in Enel Facilities for advanced users and ICT staff on key topics that required in-depth knowledge ( PI AF, PI Notifications...). Tailored courses with local language teacher.



Webex based presentations for online introducing of new products all across the board ( PI Coresight, PI Manual Logger )



Instructor-led courses in OSIsoft facilities for very specific topics for very specific profiles ( PI System Administration )

# Enterprise Agreement

## Flexibility



Flexibility to work with other partners and fit different procedures and contract conditions



Flexibility to adapt to different countries and business unit conditions



Flexibility to adapt to different site situations and budget availability.

# Enterprise Agreement

## Other services

### **EPM**

PI Program Manager as single contact taking care of everything

### **CoE**

COE consultancy for strategic projects and initiatives.

### **NOC**

Use of NOC services for better monitoring of sites and raise reliability of the system

### **vCampus**

User community and forums for application development and personal test PI Server environment

**Thank you very much**



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